

## REMARKS

The application includes claims 1, 4-13, and 16-19 prior to entering this amendment. (The applicants note that claims 2-3 and 14-15 were cancelled in the previous amendment, but the examiner addressed those claims as if they were still pending. Accordingly, the applicants do not address objections and/or rejections to the canceled 2-3 and 14-15 claims in this paper.)

The examiner accepts the drawings amended in the previous response.

The examiner objects to claim 14 for informalities.

The examiner rejects claims 1-3, 5-6, 9-11, and 19 under 35 U.S.C. § 102(b) as being anticipated by Faulkner, et al. ("Adaptive Linearization Using Predistortion – Experimental Results").

The examiner also rejects claims 12-15 and 17-18 under 35 U.S.C. § 102(b) as being anticipated by Faulkner.

The examiner rejects claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Faulkner as applied to claim 3 above, and further in view of Cox ("Linear Amplification with Nonlinear Components").

The examiner rejects claims 7 and 8 under 35 U.S.C. § 103(a) as being unpatentable over Faulkner as applied to claim 3 above, and further in view of applicants' admitted prior art.

The examiner rejects claim 16 under 35 U.S.C. § 103(a) as being unpatentable over Faulkner as applied to claim 14 above, and further in view of Gu (U.S. Patent No. 6,737,914).

The applicants amend independent claims 1 and 12, and amend dependent claims 4-11, 13, and 16-19 at least in part for consistency with their respective amended independent claim. The applicants add new claims 20 – 24.

The application remains with claims 1, 4-13, and 16-24 after entering this amendment.

The applicants add no new matter and request reconsideration in view of the remarks below.

The applicants point out that the claimed subject matter may be patentably distinguished from the cited reference(s) for multiple reasons; however, the following remarks are believed to be sufficient. Likewise, it is noted that the applicants' failure to comment directly upon any of the positions asserted by the Examiner in the office action does not indicate agreement or acquiescence with those asserted positions.

### Claim Rejections - 35 U.S.C. § 102

The examiner rejects claims 1-3, 5-6, 9-11, and 19 as being anticipated by Faulkner. The examiner also rejects claims 12-15 and 17-18 as being anticipated by Faulkner. The applicants traverse the rejections for the reasons that follow. Claim 1 recites:

*wherein said predistorted signal is represented as a sequence of magnitude and phase pairs; and*

*wherein said signal decomposer includes a phasor fragmentation engine to receive said sequence of magnitude and phase pairs, said phasor fragmentation engine adapted to decompose said predistorted signal into said at least two components, each of said at least two components exhibiting a respective magnitude and having a respective varying phase, said respective magnitudes of at least two of said at least two components being substantially equal.*

Claim 12 recites:

*predistorting, via applying a deliberate predistortion, said input signal to provide a predistorted signal represented as a sequence of magnitude and phase pairs;*

...

*where said decomposing comprises receiving said sequence of magnitude and phase pairs and producing therefrom said at least two component signals, each of said at least two component signals exhibiting a respective magnitude and having a respective varying phase, said respective magnitudes of at least two of said at least two component signals being substantially equal.*

The rejection of claims 1 and 12 as being anticipated by Faulkner relies on the examiner's allegation that Faulkner teaches all limitations of claims 1 and 12. The applicants have amended claims 1 and 12 to more clearly point out and distinctly claim what the applicants regard as the inventions of claim 1 and 12, and not for any other reason.

Faulkner teaches (emphasis added) "The desired input signal, *m*, in IQ form is sampled by two A/D converters. ... *The resulting signals are converted back to IQ before passing through the CRISIS correction network*, D/A converters, and reconstruction filters."<sup>1</sup> The

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<sup>1</sup> Faulkner, page 323, col. 2.  
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applicants observe that Faulkner's signals are in an IQ form prior to Faulkner's predistortion, and that subsequent to the predistortion, Faulkner's CRISIS network and "standard quadrature modulator"<sup>2</sup> continue (effectively) to use the IQ form. Simply put, Faulkner does not teach decomposing the signal subsequent to the predistortion. Even if Faulkner's CRISIS network is incorrectly construed to be a type of decomposer instead of a "correction network", Faulkner's CRISIS network uses IQ form, and must seemingly produce an IQ form to be used with Faulkner's standard quadrature modulator. This arrangement is different from the applicants' independent claims 1 and 12 in which the decomposing operates on the "predistorted signal represented as a sequence of magnitude and phase pairs" and decomposes the signal into "at least two component signals exhibiting a respective magnitude and having a respective varying phase, said respective magnitudes of at least two of said at least two component signals being substantially equal" (claim 12, with a similar limitation in claim 1). Both the input and the output of the applicants' decomposing in claims 1 and 12 are clearly not an IQ form. In summary, the cited text of Faulkner does not teach decomposing that operates as does the applicants'.

Accordingly, the cited reference does not teach all of the limitations of claims 1 or 12 and these claims are allowable.

As dependent claims 3, 5-6, 9-11, 13, and 17-19 incorporate all of the limitations of their respective independent claim, the applicants also traverse their rejection.

### **Claim Rejections - 35 U.S.C. § 103**

The examiner rejects claim 4 as being unpatentable over Faulkner as applied to claim 3 above, and further in view of Cox. The examiner rejects claims 7 and 8 as being unpatentable over Faulkner as applied to claim 3 above, and further in view of applicants' admitted prior art. The examiner rejects claim 16 as being unpatentable over Faulkner as applied to claim 14 above, and further in view of Gu. The applicants traverse the rejections for the reasons that follow.

The applicants note that claims 4, 7-8, and 16 are all dependent claims. As dependent claims 4, 7-8, and 16 incorporate all of the limitations of their respective independent claim, and

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<sup>2</sup> Faulkner, page 324, col. .  
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as the independent claims are allowable as explained above, the applicants also traverse their rejection.

The applicants point out with regard to claims 7-8 as being unpatentable over Faulkner as applied to claim 3 above, and further in view of applicants' admitted prior art, that the applicants' did not make such an admission, and the examiner is possibly misinterpreting this portion of the specification. The rejection of claim 7 relies on the examiner's statement that "Faulkner et al. does not teach the system according to claim 3 wherein said amplifier is a switch mode amplifier. However Applicant's Admitted prior art teaches the Chireix amplifier subsystem wherein the amplifier is a switch mode amplifier (pg. 10, paragraph [00031])."<sup>3</sup> The rejection of claim 8 relies on the examiner's statement that "Applicant's admitted prior art also teaches wherein the amplifier has a low output impedance (pg. 10, paragraph [00031])."<sup>4</sup> Respectfully, the applicants' paragraph [00031] does not admit prior art, but simply refers the reader to a co-pending application which is incorporated by reference. The applicants' paragraph [00031] states:

Regarding the Chireix architecture amplifier subsystem 10, it has been found that, for higher amplification efficiencies, switch mode amplifiers are preferred for the amplifiers 90A, 90B. Such switch mode amplifiers, specifically Class D and Class F power amplifiers, provide low output impedances that allow higher amplification efficiencies. A co-pending application filed on Oct. 16, 2002 and having U.S. Ser. No. 10/272,725 entitled CHIREIX ARCHITECTURE USING LOW IMPEDANCE AMPLIFIERS provides further information on the desirable components and is hereby incorporated by reference. Such types of amplifiers are not required for the invention to function but they have been found to provide performance at a desirable level.

Accordingly, the applicants believe that the rejection of claims 7-8 is traversed for this reason as well.

### **Remarks Regarding New Claims**

All of the new claims are dependent claims. As dependent claims 20-22 incorporate all of the limitations of independent claim 1, and as dependent claims 23-24 incorporate all of the limitations of independent claim 12, the applicants believe that these claims also traverse the rejections and are allowable.

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<sup>3</sup> Office Action, page 8.

<sup>4</sup> Office Action, page 8.

### **Conclusion**

For the foregoing reasons, the applicants request reconsideration and allowance of the remaining claims. The applicants encourage the examiner to telephone the undersigned at (503) 224-2170 if it appears that an interview would be helpful in advancing the case.

**Customer No. 73552**

Respectfully submitted,

STOLOWITZ FORD COWGER LLP

A handwritten signature in black ink, appearing to read 'Graciela G. Cowger', is written over a horizontal line.

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